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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,374	09/30/2003	Thomas McNulty	125640-1	5988

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GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH  
PATENT DOCKET RM. BLDG. K1-4A59  
NISKAYUNA, NY 12309

EXAMINER
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ZIMMER, MARC S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/675,374	<b>Applicant(s)</b> MCNULTY ET AL.	
	<b>Examiner</b> Marc S. Zimmer	<b>Art Unit</b> 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-33 is/are rejected.
- 7) ☐ Claim(s) 5 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

***Election/Restrictions***

Applicant's election with traverse of group I, claims 1-15 and 17-33 in the reply filed on April 25, 2006 is acknowledged.

Applicant has expressed a lack of full understanding of the Examiner's stated reasons for restriction. It is acknowledged that the Examiner's rationale is convoluted by the fact that the wrong claim number had been alluded to not only in the outline of the two groups, but also in line 11 on page 3.

What it appears that the Examiner had been attempting to explain was why the claim directed to a core, claim 17 would be included in a first group with the other claims, but not the claim 16, which is directed to a mold.

As the Examiner understands the terms core and mold, a core is an article that may represent an inner surface around which a material to be molded is cast. The core, as claimed, has no specific dimensional attributes and, thus, any reference teaching a product that is even *capable of* being used in this capacity serves to anticipate the claims provided, of course, that the product is made from a composition equivalent to that recited in claim 1. A mold, on the other hand, connotes an article having a hollowed out shape that represents an exterior surface that defines the shape a casted material will acquire at its surface. It is submitted that, whereas any similarly constituted product is capable of fulfilling the role of a core, a mold, conversely, has to have certain dimensional attributes, i.e. have some type of hollowed-out center to satisfy its role as a mold.

The process of making a core, claim 28, has no provision for imparting specified dimensional attributes to said core. As the Examiner views claim 28,

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any reference that teaches the same sequence of steps and makes even cursory mention of an article of manufacture that could be used as a core anticipates claim 28 and also claim 17. The Examiner does not believe that a reference teaching the process of claim 17 necessarily leads to an anticipation of the claimed mold of claim 16 hence they are separable.

The Examiner regrets that the justification for restriction was not so clearly stated in the previous correspondence.

The requirement is still deemed proper and is therefore made FINAL.

This application contains claims drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Claim Objections***

Claim 5 is objected to because, unlike in claim 6, the ceramic powders are not listed in the alternative as indicated by the conjunction "or". It would appear that Applicant actually intends for all of these materials to be simultaneously present. For the purpose of evaluating the claim against the prior art, the Examiner has assumed that it is not necessary that the composition contain all of these powders at the same time. Correction is required.

Claim 8 should be amended so as to remove "a and b" from the second-to-last line of the claim. It appears that Applicant had initially intended to define "a" and "b" together and then opted instead to define them separately.

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The other claim objections outlined previously are hereby withdrawn in view of Applicant's remarks.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner believes that it would be appropriate to redefine the variable "a" as 0 to 1. Applicant's point is well taken but a string of (CR<sub>2</sub>) moieties taken together essentially represents a single divalent moiety where the valencies occur at each end of the string.

The other rejection under 35 U.S.C. 112 is hereby withdrawn in view of Applicant's remarks.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-5, 8-14, 17-19, 21-25, 27-28, and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Mine et al., U.S. Patent # 4,269,753 for the reasons outlined in the correspondence dated January 18, 2006.

Claims 1, 3-5, 8-9, 11-12, 16, 18, 21, 23-25, 28-29, and 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Atwell et al., U.S. Patent # 4,888,376 for the reasons outlined in the correspondence dated January 18, 2006.

Claims 1-5, 9, 11-13, 17-19, 21, 24, 28-29, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Schilling et al., U.S. patent # 5,162,480.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mine et al., U.S. patent # 4,269,753 for the reasons outlined in the correspondence dated January 18, 2006.

Claims 2 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atwell et al., U.S. patent # 4,888,376 for the reasons outlined in the correspondence dated January 18, 2006.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mine et al., U.S. patent # 4,269,753, Atwell et al., U.S. patent # 4,888,376, and/or

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Schilling et al., U.S. patent # 5,162,480 for the reasons outlined in the correspondence dated January 18, 2006.

Applicant traverses the Examiner's rejection on several fronts. Curiously, all of the arguments seem to be directed to the inadequacy of the reference as it pertains to limitations recited in dependent claims. That is to say, Applicant never actually explains why the reference fails to anticipate the base claim. In any case, each argument will be addressed in order.

... the compositions of Mine do not appear to have the degree of functionality recited in claims 2 and 3, or embodied in the monomers/oligomers recited in claims 8 and 10. As discussed in the specification, high functionality is critical for achieving green products having the strength and toughness required for many casting applications.

The Examiner respectfully disagrees. Applicant is encouraged to review column 4, lines 15-19 as it pertains to claim 2. Concerning claim 3, Mine says of the alkenyl group-functional silicone components and the hydrosilyl group-bearing polysiloxane that there are "at least two" of said groups. The skilled artisan will immediately envision polymers having three, four, and more of these groups based on this description.

As for claims 8 and 10, these limitations would, in fact, seem to be satisfied by the polymer materials disclosed at column 6, line 25 and column 6, line 15 respectively.

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Applicant emphasizes in several places throughout their response the importance of high functionality without actually defining what is meant by "high". In any case, the claims themselves define a minimum alkenyl group and hydrosilyl group content and said content is clearly anticipated by the reference.

...Moreover, there is no clear indication that Mine is describing low viscosity silicone matrix compositions, as recited in claims 8 and 10-11, for example. The Examiner refers to the viscosity measurement for one particular component of the Mine compositions (col. 3, lines 51-56). However, Applicant submits that such a disclosure can in no way provide an indication of the viscosity for the entire silicone compositions.

It should be noted that, of the aforementioned claims, only claim 11 formally recites a viscosity associated with a component of the claimed composition.. More significantly, Applicant's arguments would suggest that these claims make mention of a viscosity of the entire composition but this is an erroneous position. There is a viscosity implicit in the description of claims 8 and 10 but it is the viscosity of a single compound. Likewise, claim 11 stipulates that it is the precursors to a crosslinked product that have a viscosity of 1 to 1000 cs, not the entire composition.

*In arguendo*, the reference teaches the employment of similar crosslinkable materials having similar degrees of polymerization/constitution and similar quantities of ceramic fillers. Therefore, it is expected that the compositions contemplated by Mine will inherently possess viscosities comparable to those of Applicant's invention.



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... Moreover, Applicant does not believe Mine specifically describes a process carried out in the absence of solvent, as recited in pending claim 19. The undersigned has reviewed the referenced language in column 5 of the patent, but submits that the wording is not definitive as to the optional presence of solvent.

Moreover, the examples (beginning in col. 6) appear to be using one or more solvents (isopropyl alcohol at...

The Examiner agrees that isopropyl alcohol is mentioned but not in the context of being a solvent for the composition. Rather, it is the catalyst that is introduced as a solution in isopropanol wherein the amount of the alcohol, as a fraction of the total weight of the composition would be so small as to essentially represent nothing more than a minor impurity. Furthermore, platinum hydrosilylation catalyst solutions are nearly always furnished commercially as solutions for ease of handling. It is the Examiner's position that one of ordinary skill would fairly characterize the compositions described in the Examples as solvent-free in view of these points.

Applicant presents a similar argument in their analysis of Atwell et al. Toluene and isopropanol are indeed mentioned in the Examples but only in the context of making the polymers later used in forming sintered bodies. Toluene is removed *in vacuo* subsequent to polymer formation and the isopropanol used as antisolvent for precipitation and isolation of the polymer. They are not, however, used in the subsequent crosslinking stage except to the extent that, again, the catalyst is added as a solution in isopropanol.

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...While Atwell certainly describes curable organopolysiloxanes, the reference fails to meet other limitations in the claim. For example, while there is some mention of vinyl groups and what might be termed hydride reactive groups, Atwell appears to fail to disclose compositions with the high degree of functionality recited in claim 3, or in claims 8 and 10. Atwell never discloses a...

The content of vinyl- and hydrosilyl groups mandated by the claims is clearly satisfied by the polymer recited in Example 1 wherein the repeat units containing vinyl groups and hydrosilyl groups each makes up 14 mol% of the polymer. One of the polymers recited in claim 10 is anticipated by the organohydrogensiloxane disclosed in Example 5, Part B.

...Atwell is also directed to components in which the ceramic constituent must be silicon carbide. The reference never discloses the use of other ceramic powders claimed for the present invention (e.g., see claims 5 and 6), such as alumina, fused silica, zirconia, and the like....

This is completely immaterial to the patentability of claim 5. The reference need only teach one of the members of the list for the entire claim to be anticipated.

...Moreover, the specific monomers covered by the Schilling patent appear to be those which are self-curing, as the Examiner has pointed out. In that regard, the reference never discloses a process in which silicone monomers/oligomers must be cross-linked or polymerized in the presence of a metallic catalyst - a key requirement for embodiments of the present invention (inter alia, claim 18). The Examiner appears to be inferring from examples in the patent that a metal catalyst must be present, since cross-linking is

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occurring. Applicant responds by emphasizing that the equilibration process described in the patent does not appear to rely on these types of catalysts. This is in marked...

The reference alludes to an equilibration process in the context of producing siloxane copolymers having chemically-complimentary groups, i.e. both hydrosilylatable alkenyl moieties and hydrosilyl (silicon-bound hydrogen) groups. While it is acknowledged that the reference does indeed fail to expressly disclose a hydrosilylation catalyst, NONE of the claims actually stipulate the presence of a platinum catalyst. Perhaps a hydrosilylation catalyst was deemed unnecessary in view of the higher temperatures being employed (where, ostensibly, a catalyst promoter would be unneeded to accelerate the rate of reaction). Were Applicant to incorporate mention of a platinum catalyst as a means of overcoming this reference, it is the Examiner's position that this aspect would at least be obvious given that their use is ubiquitous in the art.

Incidentally, self-curing in the context of this reference merely indicates that no crosslinker is necessary insofar as one polymer contains two groups that are reactive towards one another thereby permitting the base polymer to be crosslinked by itself.

Concerning the Applicant's traversal of the 35 U.S.C. 103 rejections, one of ordinary skill would readily envision from the broader disclosures that which is not expressly taught by way of Example as is explained by the Examiner's last correspondence. Applicants other arguments are not convincing because these

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other aspects not expressly taught are conventionally practiced in the prior art and are, therefore, unobvious. Moreover, mixing a filler with a dispersant prior to blending the same with the host polymer is known as a means of facilitating even mixing with lower energy requirements. The dispersant serves as a compatibilizer of sorts between filler and matrix and it is obvious that its effect is optimal where it and the filler are brought into intimate contact prior to adding the filler to the polymer, this as opposed to combining the dispersant and polymer first and then adding the filler so that the dispersant and filler are only brought into contact as mixing proceeds

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is

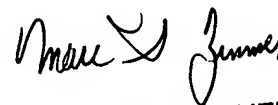
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571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 2, 2006

  
MARC S. ZIMMER  
PRIMARY EXAMINER